

ABSTRACT

5 The invention provides methods and devices for the
electrochemical generation of nitrogen from organic
nitrogen compounds, such as hydrazides (RCONHNH_2), the
corresponding organic hydrazino-carboxylates ($\text{RCO}_2\text{NHNH}_2$) and
10 amino-guanidine salts (e.g. aminoguanide bicarbonate
 $\text{H}_2\text{NNHC}(\text{NH})\text{NH}_2 \cdot \text{H}_2\text{CO}_3$). A variety of organic hydrazides and
hydrazino-carboxylates may be used, and empirically tested
for performance. For example, in the hydrazides and
15 hydrazino-carboxylates "R" may be an alkyl, alkenyl,
alkynyl or aryl group, in some embodiments methyl, ethyl,
or benzyl. The alkyl, alkenyl and alkynyl groups may be
branched or unbranched, substituted or unsubstituted. The
utility of such compounds may be routinely assayed in
accordance with the guidance provided herein, including the
Examples set out herein in which alternative nitrogen
compounds may be substituted for routine test purposes.